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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

WILLIAMS, ARUN C

ART UNIT

PAPER NUMBER

2838

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/579,433	Applicant(s) AL-KHAYAT ET AL.	
	Examiner ARUN WILLIAMS	Art Unit 2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 11-13, 15-22 and 25-27 is/are rejected.
- 7) ☒ Claim(s) 9, 10, 14, 23, 24 and 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/8/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

This is in response to an amendment/response filed on 12/8/2008

Claims 1,5,9,11,15,16,19, and 21 have been amended.

No claims have been cancelled.

No new claims added.

Hereon, claims 1-28 are currently pending wherein claims 1-8,11-13,15-22,25,26, and 27 are rejected; claims 9,10,14,23,24, and 28 are objected.

Specification

1. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

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- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A
“Sequence Listing” is required on paper if the application discloses a
nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if
the required “Sequence Listing” is not submitted as an electronic
document on compact disc).

2. The specification is further objected, referencing to claims in the specification which is recited on page 4. Appropriate correction is required

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4,6,7,11-13,15-18,20,21,25,26, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Wills, USPAT6,219,623.

As for claim 15, Wills discloses and shows in Fig. 1-3 a system for controlling which controls connection of a supply of AC power to a load and to a power supply grid, the supply of AC power being generated by an AC power generating system of the kind that comprises a source of power(10) arranged to provide an electrical output, a converter (20) means for generating an AC power output to supply the load from the electrical output, and a control (70) means unit ,which are operable to control the operation of the converter means and thereby to supply the power required to the load(40) both when the AC power output of the AC power generating system(60) is connected to the power supply grid (5) as well as to the load and during independent

operation of the AC power generating system to supply the load including in the event of disconnection of the AC power output from the power supply grid, the control means unit being operable in response to signals derived from sensed current and/or voltage of an electrical output which is generated by the converter means from the electrical output of the source of power, the system operable to monitor the current and voltage of the AC power output and the voltage of the power supply grid, mean to derive one reference from the monitored AC power output voltage, said one reference being for use as a reference in the operation of the converter means to control the generation of that AC power output during independent operation of the AC power generating system to supply the load, and to derive another reference from the monitored grid voltage, said control means unit being operable to replace said one reference by the other reference which is derived from the monitored grid voltage when the AC power output is connected to the power supply grid such that generation of the AC power output by the converter means of the AC power generating system is controlled in accordance with the other reference that is derived from the monitored grid voltage when the AC power output of the AC power generating system is connected to the power supply grid as well as supplying the power required by the load, so that the voltage of the AC power output is changed to correspond to the grid voltage in phase and frequency (cols.5-6); voltage reference (180) and voltage controller (140) (cols.5-6)

As for claim 16, Wills discloses and shows in Fig. 1 control unit (70) is operable to replace said other reference by said one reference with which said other reference is overlapping in phase and amplitude so that said AC power generating system operates

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independently and continues substantially without interruption to supply the power required by the load (col.7, lines 8-28)

As for claim 17, Wills discloses the source of power is controllable and provides a variable voltage and/or current electrical output, the AC power output generated by the converter for supply to the load being substantially independent of variations in the electrical output of the controllable source and said control unit being operable to control the operation of said controllable source as well as the operation of said converter (col. 8, lines 16-26).

As for claim 18, Wills discloses control unit that is operable to control the operation of the controllable source is responsive to the monitored current and voltage of the AC power output when the AC power output is connected to the power supply grid so that active and reactive power that are transmitted to the power supply grid are adjusted and controlled in accordance with the voltage of the grid (col.8, line 66 – col.9. line 4).

As for claim 20, Wills discloses and shows in Fig. 3 a voltage reference generator (120) means which are operable to produce one output signal and a voltage controller (140) which is operable to compare the monitored AC power output voltage with said one output signal and thereby to produce said one reference (col.10, lines 48-49).

As for claim 21, Wills discloses and shows in Fig. 3 a voltage reference signal which is derived from the monitored grid voltage is fed to said voltage reference generator, said voltage reference generator being operable to modify said one output

signal so as to change its phase and amplitude progressively towards those of said voltage reference signal, connection of said AC power output to the grid being delayed until after said one reference and said voltage reference signal are substantially overlapping in phase and amplitude (col.7, lines 8-28 & col.10, lines 48-49)

As for claim 25, Wills discloses other reference is derived from said voltage reference signal (col.10, lines 48-49)

As for claim 26, Wills discloses said other reference is also derived from an active power reference and a reactive power reference (col.5, lines 23-26)

As for claim 27, Wills discloses said other reference is also derived from said monitored AC power output active current (col.6, lines 29-30) (Note: monitoring of the current implies a current measuring device)

As for claims 1-4,6,7,11,12, and 13, the method will be necessitated in view of the device as disclosed in the rejection of claims above, since the structure recited in "Wills" is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent. Or where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. *In re Best*, 195 USPQ 430 (CCPA 1977) and MPEP 2112.01.

According, claims 1-4,6,7,9,11,12, and 13 would have been inherent.

Claim Rejections - 35 USC § 103

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5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 5 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wills in view of Lynch et al,(Lynch), US2004/0145357.

As for claim 19, Wills differs from the claimed invention because he does not explicitly disclose AC power output current is monitored between the inductor and capacitor of an LC filter.

Lewis discloses and shows in Fig. 1 an AC power output current is monitored between the inductor and capacitor of an LC filter (par.[0004])

Lewis is evidence that ordinary skill in the art would find a reason, suggestion or motivation to use an AC power output current is monitored between the inductor and capacitor of an LC filter.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Wills by using an AC power output current is monitored between the inductor and capacitor of an LC filter for advantages such as providing the ability to filter out unwanted frequencies (par.[0004]), as taught by Lewis.

As for claim 5, the method will be necessitated in view of the device as disclosed in the rejection of claims above, since the structure recited in "Wills in view Lynch" is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent. Or where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. *In re Best*, 195 USPQ 430 (CCPA 1977) and MPEP 2112.01.

According, claim 8 would have been obvious.

9. Claims 8 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wills in view of Lynch et al,(Lynch), US2004/0145357.

As for claim 22, Wills differs from the claimed invention because he does not explicitly disclose a phase lock loop having an input and an output, wherein said monitored grid voltage is fed to the input of the phase lock loop and said voltage reference signal is emitted from the output of said phase lock loop.

Lynch discloses and shows in Fig. 1 a phase lock loop (80) having an input and an output, wherein said monitored grid voltage is fed to the input of the phase lock loop and said voltage reference signal is emitted from the output of said phase lock loop (par.[0038])

Lynch is evidence that ordinary skill in the art would find a reason, suggestion or motivation to use a phase lock loop having an input and an output, wherein said monitored grid voltage is fed to the input of the phase lock loop and said voltage reference signal is emitted from the output of said phase lock loop

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Wills by using a phase lock loop having an input and an output, wherein said monitored grid voltage is fed to the input of the phase lock loop and said voltage reference signal is emitted from the output of said phase lock loop for advantages such as providing a direct and quadrature wave exactly in phase with the voltage (par.[0037]), as taught by Lynch.

As for claim 8, the method will be necessitated in view of the device as disclosed in the rejection of claims above, since the structure recited in "Wills in view Lynch" is

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substantially identical to that of the claims, claimed properties or functions are presumed to be inherent. Or where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. *In re Best*, 195 USPQ 430 (CCPA 1977) and MPEP 2112.01.

According, claim 8 would have been obvious.

Allowable Subject Matter

10. Claims 9,10,14,23,24, and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

1. Applicant's arguments filed 12/08/2008 have been fully considered but they are not persuasive.

2. In response to applicants' argument that

I. Wills, however, does not disclose or suggest the use of" two references for use in the operation of a converter as in the claimed invention, with one reference for use when the AC power generating system is connected to a power supply grid and another reference for use during independent operation of the AC power generating system.

II. Wills fails to disclose or suggest that, when the AC power generating system is connected to the power supply grid, the voltage of the AC power output is changed to correspond to a grid voltage in phase and in frequency.

3. The Examiner disagrees and submits,

I. Wills does disclose (col.7, lines 18-40) the use of" two references for use in the operation of a converter as in the claimed invention, with one reference for use when the AC power generating system is connected to a power supply grid and another reference for use during independent operation of the AC power generating system.

II. Wills disclose (col.6, lines 54-64) when the AC power generating system is connected to the power supply grid, the voltage of the AC power output is changed to correspond to a grid voltage in phase and in frequency.

Accordingly, the rejection is still proper and thus maintained.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to ARUN WILLIAMS whose telephone number is (571)272-9765. The examiner can normally be reached on Mon - Thurs, 6:30am - 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Akm Ullah can be reached on 571-272-2361. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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